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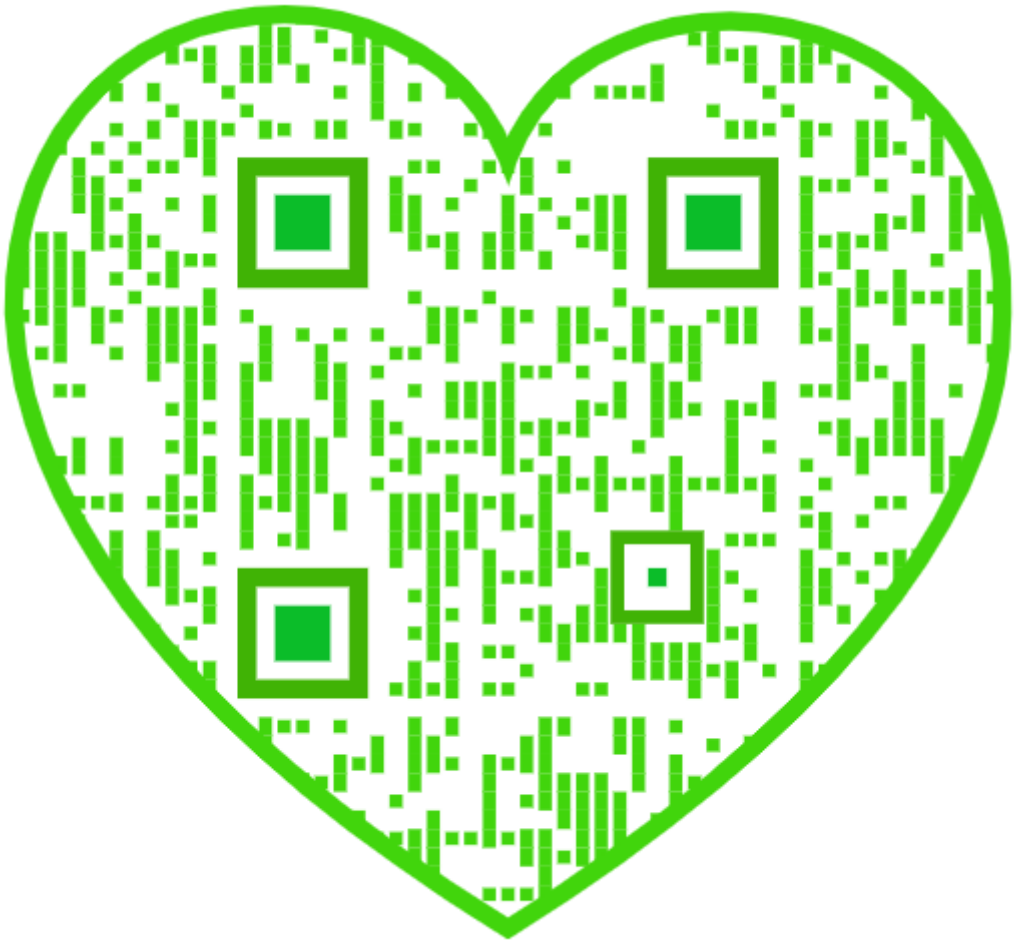

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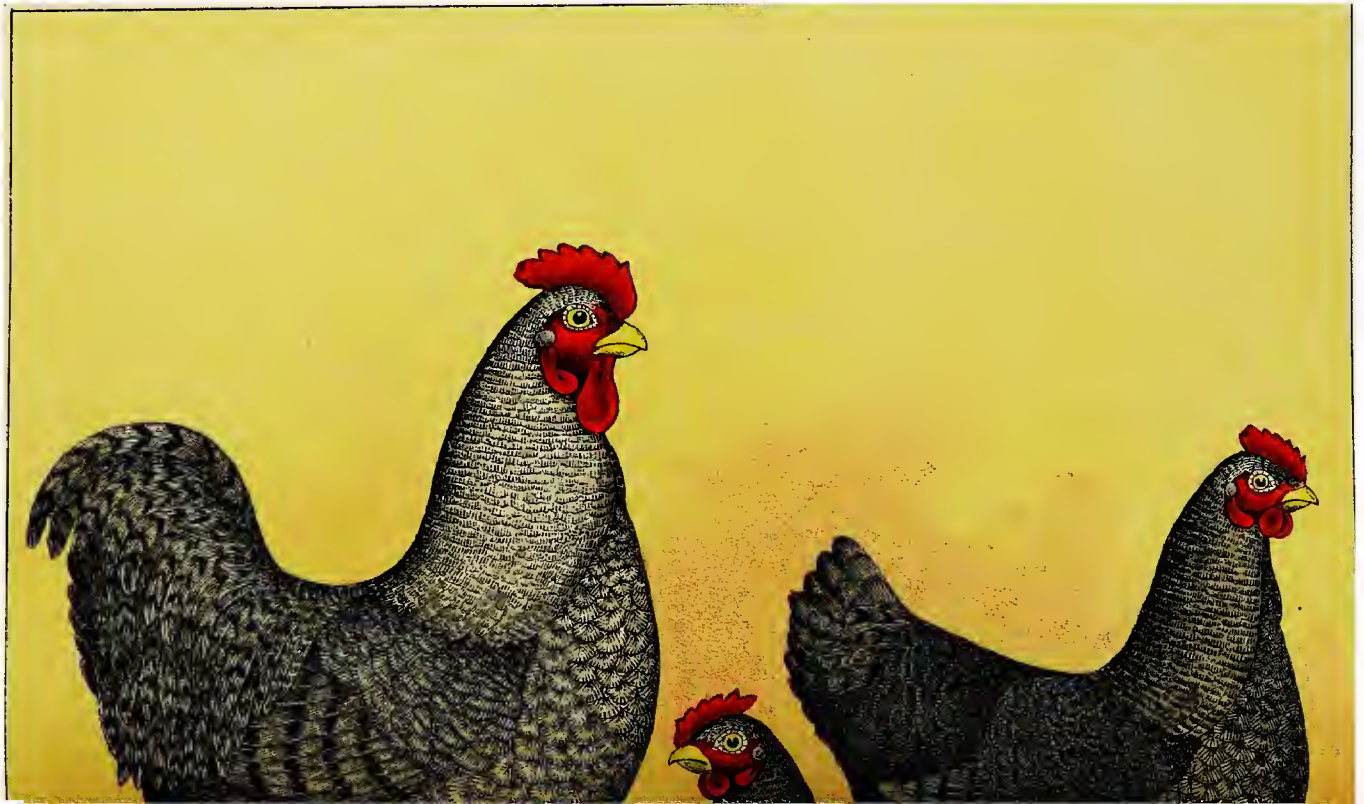

—Poultry Monthly, Albany, N. Y.

TRIO · OF · PLYMOUTH ROCKS.

Chromo Edition.—No. 1 of the Series of American Breeds.

BARRED AND WHITE

PLYMOUTH ROCKS:

Their History, Characteristics and Standard Points; How to Mate and Rear them for Exhibition and Commercial Purposes; with a Chapter on Their Diseases and Treatment.

BY

JOSEPH WALLACE,

Associate Editor of "The Poultry Monthly;" Late Editor of the "National Poultry Monitor" and "American Poultry Journal."

ALBANY, N. Y.:
FERRIS PUBLISHING COMPANY, 481 BROADWAY.
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INTRODUCTION.

The popularity and sterling merits of the Barred and White Plymouth Rock fowls, amidst the past and present *booms* on new breeds, have evoked such a vast and increasing interest in *standard and commercial poultry culture*, as to merit a *special treatise* at our hands. The magnitude of the poultry interest at home and abroad, the evolution of new breeds to meet the demands of popular taste, and elevate the character of our native fowls for table use, have stimulated the inborn skill and genius of our fanciers to new efforts, who can now look with supreme pride and exultation to those grand and useful breeds they have evolved and given to the world, which stand to-day, vast and imperishable monuments to their originality, skill and enterprise.

The interest manifested in the Barred Plymouth Rock breed, the "first born" of native skill, is only equaled by the birth of its first cousin in spotless *robes of white*. These matchless cousins are America's grandest and proudest triumphs, and while they hold the post of honor for comeliness and utility, we must accord to their new rivals all the merits to which they are justly entitled.

In presenting this book on Barred and White Plymouth Rock fowls to the public, and in view of the excellent small works already written on the barred or gray breed, we do not claim for our work superior merits. But those monographs were written when the breed was in a state of transition, when there was no White Plymouth Rock to assert its equality and independent variation from the parent stock, and when poultry culture was in its early stages of growth. Since then many changes have been made in the character and scope of

the American Poultry Association, many changes in the Standard of Excellence, many modifications in our old and new breeds, many thousands enrolled in the army of fanciers, many perplexing difficulties in the art of breeding mastered, and many poultry periodicals have sprung into existence to diffuse poultry literature, and lead in the march of progress and improvement.

In view of the past, present and future interest in *standard and commercial poultry culture*, the grand achievements instituted by our fanciers in bringing forward so many valuable and useful breeds for the pleasure and benefit of our people, we respectfully *dedicate this book to* THE POULTRY BREEDERS OF AMERICA.

JOSEPH WALLACE,
Janesville, Wis.

PART FIRST.

Barred Plymouth Rocks.

ORIGIN AND HISTORY.

This popular breed is doubtless one of the best, if not the very best of our domestic fowls. They are said to have originated from a cross between a Dominique cock and a Black Java hen. The progeny, though combining the well known qualities of both sire and dam, did not resemble either in plumage, contour, size, color of legs, beak or relative points, but the mating produced very dark plumaged chicks of a cloudy or inky color with lighter hued edgings, indistinct and variable in the bars as if the elements were in conflict for ascendency, or a combination had been effected to blend the characteristics of both breeds together.

At the time of making the Plymouth Rocks, the Brahma and Cochin fowls were creating a furore throughout this country and England. The original Plymouth Rocks of Dr. J. C. Bennett, which sprang from a Cochin cock, and a hen of fawn colored Dorking, Great Malay and Wild Indian crosses died a natural death, as they produced an offspring with red or speckled colors, sometimes darkish brown and gray, with bluish bars, and frequently some with a fifth toe and feathered legs.

The present Plymouth Rock is nowise connected, only in name, to the fowl produced by Dr. Bennett. Who originated the modern Plymouth Rock is a matter of dispute. Giles, Drake, Ramsdell and Upham are mentioned, but to whom the honor is due will, perhaps, forever remain unknown. However, it is a fact, that other breeds, at one time or another, have been crossed on the Plymouth Rocks to give them size, type, greater uniformity of plumage, and the coveted yellow beak and legs. Mr. Felch asserts that the Essex

strain has White Birmingham blood in it. Of this we know nothing. We know there is a breed in England called White Bristol, but the "Birmingham" is a stranger to us. The same gentleman, also says, that the Plymouth Rocks recently received a Brahma cross, which they needed; it enlarged the eggs, diminished the death rate in the adult fowls, but instead of allowing the cross to improve the breed, many are trying to introduce a new feature, and demand that we acknowledge the breed with a pea comb. * * * *

Although it is certain that several crosses have been added to the Plymouth Rocks since their incipiency, it is universally admitted that they originated from breeding the old fashioned Dominique cock with Black Java hens. It is also an unquestionable fact that they were bred from selected birds, for it is stated that the strain of Java hens was exceedingly prolific, and the Dominique was universally known as the best all round breed in the country. We further find that the product from the first cross was a large bird, weighing as much as one of our barred specimens, but recent top crossing with the Dominique has reduced the size in some strains, while the addition of Cochin or Brahma blood has kept up the size, and imparted all its good qualities without its principal drawbacks.

CHARACTERISTICS.

The Plymouth Rock fowls commend themselves to the lovers of useful breeds. Of all our domestic fowls, perhaps this breed stands the highest for general purposes. They almost vie with the Asiatics in size, the Leghorns in egg production, the Dorkings in quality of flesh, and the Dominiques in hardiness and adaption to climatic changes. They combine more useful qualities than any other breed known to us, and fill the void between the size and weight of the Asiatics and the European fowls.

Years ago the Plymouth Rocks were comparatively little known outside the New England states. They did not at first attract much attention among fanciers, owing to their sober and plain colors. The Brahma was then in all its popular glory, and who dare bring a successful rival before the public? But experienced breeders, with an eye to utility, saw in this cross-bred fowl a massive frame, robust constitution, well balanced organism, good flesh, splendid laying qualities, prepotent powers, great individuality, noble carriage, sound plumage, invincible color, remarkable hardiness and domestic habits, that required only skillful cultivation to make them the most popular and desirable of breeds.

The great want in the eastern markets for a compact fowl having close grained and yellow skin, clean legs, small bone, and average from six to eight pounds, when dressed, brought out this breed to public notice, as one eminently fitted to supply such requirements. Besides size and weight, they have the additional qualities of putting on good flesh kindly, laying a large number of good sized eggs, rich in nutritive value, healthy, hardy, and able to stand the wear and tear of ordinary life, whether in the fancier's yard, in the farm runs, or in the squatter's range.

Plymouth Rocks are not affected by a change of location; they have the ability to stand bad usage and the severe changes of climate and seasons. They are good foragers for a large fowl, and have the desirable quality of being self-reliant. They will bear confinement well, and content themselves under varying conditions and surroundings. They have a pleasing form, one that would strike the ordinary observer with the idea of usefulness. They are a plain, comely and honest looking fowl, one that seldom deceives its owner. To many, they appear handsome, and handsome they really are, if we judge them by their physical beauty and the eye of a true artist. However, the majority of the American people emphatically pronounce them handsome, and where, on this earth, can we find better testimony?

The Plymouth Rocks, through all the rivalry and competition consequent on their valued character, have been with a good show of truth, aptly and appropriately called "the coming fowl," and judging from the vast number of earnest, honest and practical people in all walks of life that are breeding them for pleasure, for profit, or for both, they must merit the appellation.

POPULARITY AT HOME AND ABROAD — While *new breeds* are "booming," the Plymouth Rocks are solidly engrafting themselves in the affections of those that take utilitarian views regarding breeds. Few of the tens of thousands who breed them find fault on the score of utility. Those who were disappointed in getting show birds in years passed, may have exchanged them for other breeds, but the thousands of farmers, ruralists, cottagers and professional amateurs that have bred them year after year, and those that have grown gray in the business, gladly attest to their sterling worth.

The general verdict of Plymouth Rock breeders can be encompassed in the words of a noted fancier and judge. "The Plymouth Rock is, beyond all question, the best general purpose fowl of all the breeds before the public. They have been before the public many

years, have borne the competition of other fowls, have been subjected to every test that fowl could be subjected to, and have come out of all these trials still as much praised and as much liked, both by the fancier and general public as when they were first known. Two things are demanded of the perfect fowl — a large amount of good meat when on the table, and a large laying capacity. It is safe to say that no other breed combines these two qualities as well as the Plymouth Rock. There may be hens that will lay more eggs, though we doubt it. Taken weight for weight, we have never seen the fowl that could equal the Plymouth Rocks, and certainly no fowl surpasses them for table use. They are a beautiful breed, combining with their large size, beauty of carriage to a degree not common with fowls. The only fault that can be found with them, is the tendency to breed back to show some of the characteristics of the breeds from which they are derived, but those showing only the best points should be kept for breeding purposes. For the farm, no fowl is equal to the Plymouth Rock."

A few years ago the "boom" on Plymouth Rocks was only equaled by the *hen fever craze* on Brahmas. Their unprecedented popularity brought out new breeds, and with that peculiarity so characteristic of the average American fancier, they were taken up, boomed, enthused, and even overrated, and for a while diverted a good share of the attention of novices and amateurs from this almost idolized breed. True, it was never claimed they possessed æsthetic beauty, nor that they are strictly a fancy breed in the sense we apply it to Polish, Hamburg, etc., but for all purposes of egg and flesh production, they are the rich man's pride, and the poor man's mainstay. There are those who claim to know what is true beauty, that do not hesitate to say the Cuckoo or Dominique color is handsome, the favorite color of the Ventian, Grecian and Oriental mosaic and fluted pillars, and mostly all the ancient Moorish paintings and moresque work ; also an indication of hardiness and fecundity in the fowl. A flock of evenly plumaged Plymouth Rocks presents a pleasing and gratifying sight ; sober and positive color and distinctness mark every feather from chickenhood to old age, defying alike the summer's sun and winter's frost.

The popularity of the Plymouth Rock is not confined to this country. The *London Fanciers' Gazette* says : "The Plymouth Rocks, as their name would imply, are an essentially American breed, and in fact, have been manufactured across the 'herring pond.' They are, however, not to be despised on this account, and though

they are undoubtedly made up of two or three breeds, yet they now breed very true, and for all practical purposes are a distinct breed. In America they are very great favorites, and hold, perhaps, the first position on that continent. In this country they have become very popular indeed, as is shown by the very large numbers exhibited during the past season, and as they are very good layers, first rate table birds, both large in size, and with well flavored flesh, very hardy, easy to keep and rear and not very heavy eaters, bearing confinement well, we are not surprised at their popularity, and should be surprised if they did not greatly increase."

Poultry, another English journal of great weight, says of them: "The tabulated list of entries at the Palace, Dairy and Birmingham shows, show that the Plymouth Rock plays a good part in 'paying the piper.' The committee of Palace show reports a profit in entrance fees on Plymouth Rocks alone to the extent of forty-six pounds, sixteen shillings over and above the amount of money and cups offered in prizes'"

In glancing over the reports of the various shows throughout the country, we find the Plymouth Rock, in most instances, the strongest classes. In turning to the Dairy show, we find their committee offered fourteen pounds prize money in two years, while their profits on entrance fees amount to thirty-six pounds, twelve shillings and sixpence, which is considerably more than any other classes except Brahmas, which amount to forty-six pounds, twelve shillings and sixpence. At Birmingham, year 1886, there were one hundred and eight Plymouth Rock entries, and the profit on entrance fees is twenty-nine pounds, twelve shillings.

Now, if the officials of those shows would devote a little more of the Plymouth Rock entry fees to prizes in their respective classes, and not go to pay for those classes that cannot pay for themselves, and if the Plymouth Rocks received the same encouragement in prize money as other breeds, they would no longer play second fiddle but come out at the top of the pole.

GENERAL APPRECIATION. — The English poultry raiser kept a careful record of the number of eggs laid by his hens from February 1st to August 1st, year 1887, with the following average results per hen for each breed named below: Minorcas, 143; Andalusians, 141; Langshans, 139; Brown Leghorns, 139; Plymouth Rocks, 137; Redcaps, 136; Black Hamburgs, 135; White Leghorns, 131; Houdans, 123. Of course the months taken are those in which the most eggs are laid, and the total for the whole year could not be double

these numbers, as the moult comes in the autumn, and the most trying months of the year are November, December and January.

In commenting upon the above record, the *London Live Stock Journal* says: "The figures are interesting, and they upset some of our preconceived notions. That Redcaps, White Leghorns and Houdans *should be beaten by Plymouth Rocks, is to say the least, surprising*, and we should be inclined to doubt whether another test like this would show the Plymouth Rock as well as this one does. It must be remembered that both the Langshan and Plymouth Rock are sitters, and would be engaged in maternal duties during the time for which this record is given, therefore their laying must have been more constant than with any of the other varieties.

INDICATIONS OF SEX AND QUALITY.—Mostly every experienced Plymouth Rock breeder, has in his mind's eye, an ideal of his own, of some feature in the makeup of the breed that he looks for in the chicken, to indicate and serve as a guide to its value as a breeder or exhibition bird when fully matured. Of course, the plumage is the great disideratum, and to it breeders bend all their acquired knowledge and skill in the effort of prejudging it.

At an early age, very little indication of type, symmetry or carriage is shown, and the chicks, when hatched, do not even show uniformity in color throughout. Many appear with a white spot on the head, and a white or light stripe running down the neck, breast and underpart of body, and a mixture of white and black on the back; others come black, showing only a small white spot on the head, and a light stripe down the neck and breast. The chicks feather early and rapidly from the start. When they are about a week old, enough of their chicken feathers appear on the wings to give the experienced breeder a fairly good indication of what their future plumage will be, but it is only on the next change of feathers that one can judge with tolerable accuracy.

The sexes, for the most part, show in the nesting feathers, and again when the wing feathers sprout three-fourths or an inch out. When bars of white and black appear, it is almost certain of a male, and when the wing feathers show black for an inch or two, followed with faint light bars, and becoming more distinct with each successive line of bars, they show a female. Again the chick that shows much white on head and continuation of the white stripe down the breast, and under the body, will, as a rule, grow to be a light colored cockerel, with white in wings and tail. The female seldom shows white on the back, though sometimes a little white appears on the

wing tips. The black on wings shows an inch or two until displaced by bars of a light color, and as each successive line of bars appear, they become more distinct.

Skilled Plymouth Rock breeders do not like to see either cockerels or pullets develop too early, that is, not to show the distinctive shape and prominence of their adult plumage before they are, at least, four months old. They say, if they show the adult feathers at a much earlier age, the tail is apt to grow too long and gives the bird too much of a Dominique appearance, or it will be carried too upright. An early tail in the female portends excessive leginess, spareness and narrow breast.

The bright yellow on legs and beak so much desired, does not always come with the chick. By far the greater number of the females show a tawny, dusky, or very dark color, and the males that show a clear bright yellow, usually have flesh colored or pale yellow legs and beak when fully matured, and the plumage will be lacking in pronounced distinctiveness in both the hue of ground color and barring. But those that show brownish yellow or tawny on the surface, with dark yellow plainly visible underneath, will, as a rule, come at maturity to the desired color, and the same signs may be taken for the development of a bright yellow beak. However, faulty colored legs and beak seem to persist in the females, particularly if their plumage tends to dark in color.

IMPROVEMENT.

The improvement in Plymouth Rocks, the past decade, has been slow but sure. Leading breeders have greatly improved their stock in type and color, the sexes show more uniformity, and the bright yellow on legs and beak is not so much a *bugbear* as formerly, to the average breeder. However, there are yet some obstacles to be overcome in breeding Plymouth Rocks to insure further possible perfection, and the great problem is, how to get females that are not too dark in plumage, legs and beak, and males that approach, or nearly approach them in uniformity of plumage, that do not show brassy or yellow feathers in hackle and saddle, and white flights and sickles, or so light that they show very few Plymouth Rock markings.

Many beginners wonder why they cannot breed Plymouth Rock cocks to average as dark as the hens. The strong Indian blood in the original Black Java, must have a share in determining the shade of plumage and color of legs and beak. The tendency to reversion comes, usually, through the weaker sex, and tends to per-

sist in that sex alone. The males always come lighter in color as a natural sequence of the Dominique breed, and not only several shades lighter, but the width of the bars are nearly a third of the light spaces between them. The inclination of every strain is to run into light cockerels and dark pullets almost invariably. When pullets come handsome in color, their legs are usually inclined to dusky yellow or greenish color, where the dark specks occur, and the beak shows similar shade. The cockerels tend to light plumage from the same mating, but usually with a more desirable color of limb and beak clearly and cleanly defined.

The points most desirable to perpetuate, are the proper shade of plumage, the yellow legs and beak, the fine single comb, and the size and weight. Type, depth of breast and body, compactness and the essential qualities of egg and flesh production are far more important in an utilitarian sense to have in the breed, than bright yellow in legs and beak, that can scarcely be obtained in average flocks. What is needed is an approach to uniformity of color and marking for breeding and exhibition purposes, but we cannot secure this invariably, or even frequently, by breeding from birds not uniform in color, or in other words, deficient in coloring matter. If your bird be light in color, see that he is the same shade all over, so if he be dark, have him dark from head to tail, and see that his markings are distinct and regular.

Plymouth Rock breeders have been striving for many years to established the exact balance of color, to bring forth· males and females to medium color and keep them there. It is an exceedingly nice point to attain, but they are approaching it slowly and surely. Some have taken a short road to procure the coverted yellow legs and beaks by topcrossing with the Dominique, or crossing with the Dominique Leghorn. With the breed itself, it is only when the females approach medium that yellow shows itself in the legs and beak, and begins to brighten. Although the mating of a medium dark cock with a medium light colored hen, may not stamp the true color on the chicks the first year, it will eventually bring closer uniformity in the sexes than by mating light cocks to dark hens. One reason we see so many color shades in Plymouth Rocks is, that one breeder mates very light cocks to dark hens, and gets a large proportion of light cockerels. Another mates light cocks to medium light pullets, and they produce many males with yellow hackles, saddles and shoulders; and some mat emedium light cocks with medium dark hens, and get a fair average of uniform chickens, while those

who mate dark cocks and dark hens get pullets that are splashed or too dark, and cockerels spotted, or very dark on back, wings and tail.

Many of the obstacles in mating Plymouth Rocks have been in a measure, overcome. The different matings already alluded to, were adopted experimentally by some, and necessarily by others. Three important and valuable features for exhibition and breeding had to be established at one and the same time, or the breed would lose its value as a show fowl. The disparity of color shade ordinarily between the male and the female, suggested various ways of modification on the female side, as the intense black color seemed to persist in that sex, and with it the objectionable legs and beak. The Standard was arbitary on "matching in the pen," and the framers of the text knew, in the depths of their souls, that to get a few pairs to match in the pen, hundreds of otherwise good birds had to suffer death from their short-sighted or unreasonable exaction, and those that matched in the show pen, when mated, did not produce their like, and they knew it at the time, and the exhibition birds were used as *weather cocks* to indicate how the "wind blew" from the exhibitor's yard, when really they were deceptions, and did not represent the average color or quality of their numerous brothers and sisters, uncles, aunts and cousins, or even the minority of their relatives and friends.

Were it not that the Plymouth Rocks had such a strong hold on the affections of the people, and the only successful rival of the Asiatics, their friends and admirers would have given up their breeding in disgust, but with a fixity of purpose commendable, they adopted various methods of mating to bridge the "color gulf" which separated the sexes, and to bring them to a state of uniformity by "meeting half way." The practice with other fowls was, if one were deficient in size of comb, color or distinctness in penciling, feathers on leg, etc., to mate it with one that had one or the other of these points in excess or in full development, so that in the union of the two, the product would be medium, or draw in opposite directions; but in breeding Plymouth Rocks, the method of breeding light cocks to dark hens (not approved of nowadays), was done to unite the two extremes to produce a "happy medium." Other combinations having the same object, were taking place at the same time in the hands of other breeders, and the dark cockerels which come from light and dark matings were matched with medium light pullets, and so on, in the hope of attaining the object in view.

DESCRIPTION.

The true type of the Plymouth Rock is extremely hard to describe in words, it must be seen in our leading shows among the higest prize winners. There are many types : some strains show an approach to the Dorking, the Cochin or the Brahma. This is not to be wondered at when we take into consideration the elements of which the breed is composed. The Java had long legs, neck and slanting back, in fact a modified Malay, or at least, of Malay blood ; then the Dominique, Cochin, Dorking, Dominique Leghorn and Brahma, all having more or less influence in giving type, still, out of all, it has a type of its own that is noble and grand and pleasing, and that does not trench on that of either the crosses individually, and is neither Dominique, Java, Cochin, Dorking nor Brahma, there is a more harmonious modification of both the Dorking and Brahma united in the type than of the other named breeds. The beautiful colored illustration on the frontispiece of this book will show the most popular type of the modern Plymouth Rock.

In general make up the Plymouth Rock is a magnificent looking fowl, it is large in comparison to the European breeds in this country and not as large as the Asiatic fowls. It is larger than medium and its standard weight brings it above medium weight. The general color may be described as grayish white barred with bluish black, each feather barred to the skin and giving the effect of bluish tinge to the plumage. The barring on the head, back, wing-butts and tail is of deeper cast than on other parts of the plumage. We will describe each section for the better information of the novice.

THE MALE.

HEAD.—This section is independent of comb, ear-lobes and wattles. It is the part which embraces beak, arch and crown ; these give a definite shape to the head. It is described as medium, and this should be understood as meaning "mean" or middle state—between large and small, long and short. Its use in the Standard does not hardly convey a clear idea of its intended meaning, but if we apply it by the rules of symmetry, the head of the Plymouth Rock should be in proportion to the size of its facial appendages and also the normal size of the fowl. The head should be carried upright, showing good breadth of crown without being as flat as that of the Cochin. It should show a good arch and height of skull above the eyes. Color, grayish white, barred with dark blue of the bluish black cast, each feather barred to the skin and free from any dingy

or smutty color. The barring should be close and even as it gives more of an artistic appearance to the plumage. Beak, yellow in color, stout at the base and well curved on the point. Eyes, bay, large and expressive in look.

COMB.— Bright red in color, small in size, fine in texture, serrations moderately deep, preferably less than eight points, and free from side sprigs. The comb should not tilt to one side, it should be erect and firm on the head, the points appearing in a straight line when viewed from the front.

EAR-LOBES.— Bright red in color, and moderately large in size, they should not be pendant or coarse, but maintain a gradual width, with a slight curve inwardly towards the ends; they should be free from white or yellow splashes; permanent white surface is a disqualification. Wattles, bright red in color, fairly developed and moderately rounded; they should not be long and pendant, or purse shaped, but of moderate size and somewhat egg shaped.

NECK.—Medium length, well arched, hackle feathers long and flowing well over the shoulders. Color, grayish white, regularly barred to the skin with blue black, giving the effect of a bluish tinge to the feathers. The hackle feathers should also be closely barred, and the barring distinct and well defined.

BACK.—Broad at the shoulders, apparently flat at base of hackle feathers, and taking a gradual concave curve from centre of back to the base of tail. Saddle, long, the feathers of which should flow well over the points of the wings. Color, grayish white, barred well to the skin with bluish black of a deeper shade than that on the hackle.

BREAST.—Full and round, with sufficient depth to give the bird a majestic appearance and an idea of usefulness. Color, grayish white, barred with bluish black. The breast is not so closely barred as the head, hackle, back and shoulders. It should, however, be well barred, and the dark bars show the same width as the light ones.

BODY.— Broad, moderately deep and well rounded at the sides, nicely poised on stout and well formed legs; both breast and body presenting from a side view nearly the outline of a semi-circle. Color, grayish white, barred with bluish black, the dark lines presenting the appearance of rings across the breast and body.

WINGS.— Medium size, folded closely, wing bows well covered by the breast feathers and free from mingled colors, the barring distinct and well defined, not too dark, but of that shade of blue which is in harmony with other parts of the plumage, white in the primaries or bronzy brown bars in the bows are defects.

TAIL.— Medium size, spread at the base and filled in with soft curling feathers, sickle and tail coverts fairly developed and carried moderately upright. Color, grayish white, barred with bluish black. The tail should present a somewhat cone shaped outline when viewed from the rear, that is, wide at the base and pointed at the top, not fan shaped, and the sickles should be free from white or discolored bars.

FLUFF.— Moderately full, without hiding the hocks and thighs. Color, bluish gray, the feathers near the thighs webbed, and fairly barred ; other parts of fluff soft in texture.

LEGS— Thighs large, strong and well covered with webbed feathers. Color, grayish white, barred with bluish black ; shanks, medium length, large, strong and well set apart, color, yellow, not greenish yellow, but rather golden yellow, and free from black scales. Toes, straight and well spaced, color, yellow.

CARRIAGE.—Upright and imposing, with a natural pride in his step and movements.

WEIGHT.—To not exceed nine and a half pounds for show, and nine pounds for breeding purposes. Cockerels eight pounds.

THE FEMALE.

HEAD.— In size proportionate to the normal size of the fowl, showing good breadth of crown, still preserving a good arch and height of skull above the eyes, color, the same as that of the male. Beak, yellow, short and well curved. Eyes, bay, large and expressive in look.

COMB.— Bright red in color, small in size, fine in texture, serrations moderately deep and free from side sprigs. It should be firm and erect on the head, and the points forming a straight line from front to rear.

EAR-LOBES.— Bright red in color, and moderately large in size. They should be free from white or yellow splashes. Wattles, bright red in color, moderately developed and well rounded. Large wattles and comb almost invariably accompany prolificness, but there is a limit to the size of both in the exhibition bird.

NECK— Medium length, nicely arched, color the same as described on the male bird.

BACK.— Broad, apparently flat at base of hackle, and taking a slight concave curve from centre of back to base of tail. The back should not be too long, neither should it have the full cushion that is characteristic of the Cochin back. Color, the same as that of the

male. The color should be uniform, the same just behind the hackle as on the cushion feathers.

BREAST.—Broad, full and deep, color, as described for male, and the barring reaching well down to the quill end of each feather. Usually the breast is the evenest barred section in the bird.

BODY.—Broad and deep, and well rounded on the sides. It should not be wedge shaped or pinched in at the sides. Color, the same as breast.

WINGS.—Medium size, folded closely. Color, a shade darker than on neck, breast and back. Wing bows barred across with very dark blue, primaries and secondaries barred with very dark blue approaching black. The wings when opened should show a distinct series of barred semi-circles, extending from the lower edge of the primaries across the secondaries and lie parallel to one another until they reach well up on the side of the wing. The flights should not be black or have smutty points.

TAIL.—Medium size, somewhat spread at the base, coverts well developed, but distinct from those of the Cochin. It should not be fanned out, but rather pointed at the top. Color, the same as the wings, evenly and regularly barred without being cloudy or black, the bars extending well across the feathers.

FLUFF.—Moderately full, not profuse or hanging down as on the Cochin, but sufficiently abundant to stand out about the thighs so as to give the bird a broad appearance behind. Color, as described for male. The barring should extend over the webbed feathers of the thighs.

LEGS.—Thighs, well developed and covered with feathers. Color, the same as on body. Shanks, medium length, stout and well set apart. Color, yellow and free from black scales. Toes, straight and well spread. Color, yellow.

CARRIAGE.—Upright and sedate.

WEIGHT.—To not exceed eight pounds for show, seven or seven and a half for laying and breeding. Pullets, six and a half pounds.

REMARKS.

We have adhered to the expressed Standard shade of color and barring in our descriptions of the male and female Plymouth Rock breed, although we used other words to express the same shade of color in our Standard for the breed when published in the January edition of the POULTRY MONTHLY. The proper description of ground color and barring is a point on which neither judges nor

breeders unanimously agree. Some English authorities say white and black; some American breeders say, primarily white with blue black, another says grayish white and blue black, others say bluish gray with dark stone color, and many say silvery blue with blue black, and so on.

The Standard describes the color in one clause. If an isolated feather is placed on white paper, it shows almost white and black; in regular and natural position on the fowl the plumage is bluish gray barred with dark blue, and where they overlap, as they do on the back, the plumage shows darker blue. The female shows a darker shade on the wings and tail than the male. Among Eastern breeders, the dark female was the choice for breeding, to avoid white under color and tendency to white in wings and tail, which were almost sure to appear in the offspring when light females were used. But by an independent though concerted action on the part of the leading breeders, lighter plumaged females have been gradually produced which are now in demand for breeding purposes, thus removing the many obstacles which heretofore impeded their use as breeders.

The color and barring to produce the bluish tinge so much desired and so highly prized in Standard Plymouth Rock birds will be better described by illustrations.

Feather No. 1.

No. 1 shows the Standard feather; it appears to have the old described colors — dark blue and bluish gray bars alternately. The value and beauty of such feathers, consist in the depth of barring to

the skin, the distinctness, evenness and regularity of the bars, the absence of smoky, cloudy or muddy appearance to the light bars and intense black on the dark bars. In mass, the light bars appear clear bluish gray, and the dark bars very dark blue; the combination of both should give the whole plumage a bluish tinge.

Feather No. 2.

No. 2 shows alternate bars of black and white part way. In this the first and second bar would remind one of the color and poor lacing on a Silver Spangled Hamburg. It is not; it is the same feather presented with objectionable black and white bars to show the novice to avoid such colors or tendency to such colors in breeding, for the dark bars are too black and the light bars are too light, and the combination of such colors could never give us that pleasing and much admired bluish tinge to the plumage that is the universally accepted ideal of shade and color among American Plymouth Rock breeders.

STANDARD REQUIREMENTS.

Through all the phases of standard making, the standard for Plymouth Rocks in place of being a guide and helper to the breed and breeder, has placed serious obstacles in the way of bringing them to a high state of cultivation for either the show pen or general fancy purposes. The truth of this statement is well known to all the earlier breeders, and, notwithstanding the protests and just criticisms of those most deeply interested in the improvement of the breed,

the futile efforts of those who strived to breed them in conformity to Standard requirements, the disgust and bitter disappointments of those who eagerly and confidingly purchased matched pairs, trios, and breeding pens for high Standard breeding, and the denunciations of all honest and common sense breeders against such a ridiculous and absurd farce as is embodied in the Standard requirements, the libel on the fair name of the Plymouth Rock still remained as evidence of the ignorance and ultraism of those who fashioned such requirements for the breed.

A distinguished writer and breeder of the east, commenting on this subject, sensibly and pointedly says: "We find that the Standard describes the color of the cock as follows, 'body color grayish white, each feather regularly crossed with bars of blue-black, giving the effect of a bluish tinged plumage.'" The color of the hen is described as the same as that of the cock.

Now we can find Plymouth Rock hens and cocks of the same color, and that, too, the color that the Standard describes. But will they if bred together produce young like themselves? Try it and see how many pullets you will have, not "grayish white," but black as crows. The cockerels of such a mating are likely to be pretty good—to resemble their sire, to be what the Standard calls for, but the pullets are very different from what the Standard demands. *Standard Plymouth Rocks* then will not breed true when mated together, and are not, therefore, a breed.

If a medium dark cock is mated with light hens, the hens being several shades darker than the cock, the progeny will closely resemble their parents, the cockerels being about the shade of the cock, the pullets about the shade of the hens. If the Standard describes such a cock and such hens, it would describe a breed, because they breed true.

If, then, a breed be what I have defined it to be (and upon this point there can be no question), and if the Standard describes such a cock and hen, under the head of Plymouth Rocks, which, mated together, will not breed true (and the experience of all the earlier breeders of this variety is a demonstration of the truth of this position), then the Standard describes as a breed what is not a breed. It selects a few individuals, exceptions to the general character of the fowls, extremes in the matter of color, and upon these exceptions and extremes it builds the requirements of a breed! Such requirements are a libel upon Plymouth Rocks. *Standard Plymouth Rocks* are not a breed: but there is a breed of fowls which for the produc-

tion of eggs and the growth of table poultry, for hardiness, for ease of keeping, adaption to all circumstances, whether it be a narrow yard 12 X 20 feet in dimensions or the unlimited range of a western ranche, has few equals and fewer superiors, that is known as the Plymouth Rock. In this breed the sexes are not of the same shade, the cock being of a lighter shade than the hen. The breed has many of the characteristics laid down in the Standard, but it is not the breed described therein as Plymouth Rocks.

Within the memory of man there was a gigantic bird in Australia, I believe—known as the Dodo. This bird has become extinct. It died out before I ever saw it. There may have been such a breed of fowls as Standard Plymouth Rocks; the makers of the Standard may have seen them; their description may be a correct one; but if this is so, like the Dodo, they have become extinct. It may be well to retain a description of them to be referred to by the student of natural history; the past with its wonders will always fascinate many. As such, and for such purposes, I think the detailed description of a lost breed has its value. But do not let us mistake the past for the present, I hope that at its next meeting, the American Poultry Association will admit to its Standard this modern breed of Plymouth Rocks. The breed has been tested, it will breed true, it is a valuable addition to domestic poultry and deserves this official recognition too long delayed already. Let not our appeal be in vain. The Plymouth Rock of the present must be admitted to the Standard."

Although it is our sincere wish to enter a plea of extenuation in behalf of Standard makers, knowing, as we do, that it is one of the most difficult, arduous and thankless tasks that a breeder is called upon to perform, and if the work assigned to him is performed to the best of his ability and agreeably to his honest and hearty convictions that it will redound to the general welfare of the fraternity, he is deserving of thanks and praise, even though his work is faulty in some respects. But when such faults have become chronic and an eyesore to every breeder, when they have time and again been pointed out as conflicting with the best interests of the breed, unscientific in principles and obviously at variance with the experience of breeders, we cannot face the broad fact and say the Standard for Plymouth Rocks should not give just cause for criticism and censure in the past.

Now that a new or revised Standard is being prepared for the Plymouth Rocks, it is hoped it will be free from those glaring and

inconsistent faults which have marked past revisions ; that it will encourage and stimulate every breeder to renewed efforts in perfecting this grand, noble and most useful of our American breeds ; that it will conduce to the best interests of the poultry industry by bringing forward the sterling merits of this breed for profit and pleasure; that it will elevate poultry raising and judging by the plain, clear and precise use of words, meaning and spirit of each point, section and clause, that it will for ever settle the wide difference of opinions among breeders on the true color and shade of plumage, and that it will define the degrees of shade between the sexes to enable them to compete and match in the show pen.

MATING FOR THE SHOW-ROOM.

The mating of Plymouth Rocks to insure an evenly plumaged flock, with bright yellow legs and beaks, has never yet been attained, because it is comparatively a recent cross-bred fowl, the elements of which are in continual struggle for supremacy. There is no universal rule to go by, for breeders will adopt different methods to attain the same objects. But, of course, there is in all breeds what is considered judicious mating, that is in harmony with the law of evolution, the law of inheritance and the law of variation. The law of evolution, so far as it is understood, is a law controlling development and keeping types within appointed circles of growth, which revolve forever upon themselves, returning at appointed intervals to the same starting point, and repeating through a succession of phases the same course. The law of inheritance points to that universal tendency in all forms of life, by which it transmits and perpetuates its likeness; the law that "like begets like." The law of variation is declared to modify this law of inheritance, individuals in any species having an original and inherent power to vary slightly from the parent form; to transmit such variations by successive transmissions and accumulations; to perfect and fix such variations; and finally, it is asserted that nature or natural selection provokes and pushes this power of variation by that fearful struggle for existence, that widespread and remorseless conflict, under whose steady pressure each living form is forced to develop to the utmost to retain and augment every slight advantage — a conflict that issues in the "survival of the fittest."

In choosing a sire for the breeding-pen, do not look to excessive size, with the idea that large size has a controlling influence on the health and vigor of the offspring. One just larger than the

average size will stamp more valuable qualities in the progeny than one that is overgrown in the same brood.

The sire is generally considered "half the pen." We respectfully dissent from this popular fallacy. The dam produces all the material for flesh, bone, muscle, feathers—in a word, the whole structure and organism, without any intercourse with the male; but the sire produces the life of that structure, modifies and controls to a certain extent the color, form, facial or plastic features of that living organism; therefore, as the dam furnishes the material for the structure of the chick, she must have greater control over the size than what is generally accredited to her.

The sire should have a medium-sized head, smooth and well shaped, and carried well up; comb medium in size, erect, straight on the head, evenly serrated, without side sprigs or excrescences, one with six points preferable; ear-lobes bright red, without spots or streaks of white or yellow; wattles well developed for the breed; neck well formed and nicely arched; breast full, broad and round at the sides; back broad, and flat at shoulders, showing from junction of neck to base of tail a gentle sweep or concave curve, lower at saddle than at hackle; body broad and deep, showing from the lower mandible of the beak to the under side of the tail an almost perfect semi-circle; tail of medium size and carried well up; legs bright yellow, of medium length and well set apart; plumage medium dark, with neck, back and tail evenly and deeply barred with deep blue on a light steel gray under-color. Such a male, mated to pullets possessing the corresponding points described for the male, and having the same steel gray ground color, evenly barred with a deeper blue throughout, will produce more valuable qualities and as fair, if not fairer, proportion of well-matched chickens than any other mating of which we know.

THE NE PLUS ULTRA MATING.

For the benefit of those who have not read the views of Mr. I. K. Felch on mating, we take the following extract from an article which he contributed to the *National Poultry Monitor* under the above heading nearly eighteen months ago: "A cockerel weighing eight and a half to nine pounds, having a low, straight, evenly serrated comb of six to eight serrations; medium size head, bluish gray, marked across with dark blue; eyes a bright red; wattles rather large, though of fine texture; fair size, bright red ear-lobes; neck of fair length, well arched and full in hackle, the color being

almost white shown on white paper, the bars across being very dark blue; back flat at shoulder, not long in appearance, color being bluish gray, barred with the darkest shade known to blue, the back having a nice concave sweep as it turns in a sharper sweep to tail; from hackle to tail, back lower at saddle than at hackle; tail carried well up, but not reaching the perpendicular position of the sickles; tail medium size, sickles reaching some three inches beyond the tail proper; saddle shading lighter than back to a tail that is still lighter in its shadings of bluish gray, marbled with a darker shade of blue; a breast full, broad and round — not a Pouter pigeon exhibition, but a well-turned one, matching well on to a round-sided body; breast and body being better expressed by a light steel-gray undercolor, barred with a deep blue, the bars reaching over the thighs; the hock being clearly defined in profile; the smoky bars visible even in the bluish-gray fluff; legs yellow, fair length. Such a male, bred to pullets that are of standard form and symmetry, but having this light steel-gray ground color of plumage evenly barred with a deeper blue throughout, will forever put to shame the breeders who tell us that no one can breed Plymouth Rocks unless they breed two pens. Let it be whatever mating one may call it, it is all the mating he who has but one pen can afford to have if he is to be a first-class breeder."

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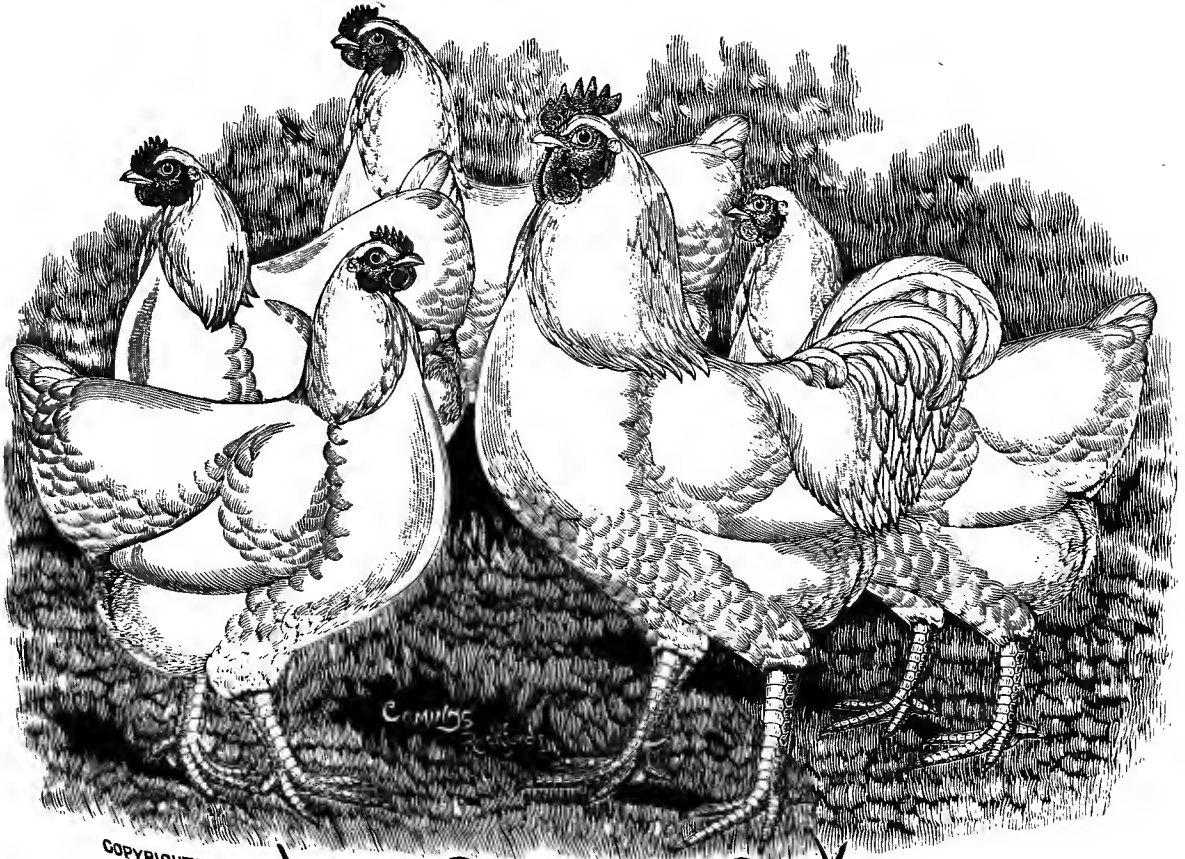

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White Plymouth Rocks.

AS BRED BY THE WHITE P. R. CLUB OF AMERICA.

PART SECOND.

WHITE PLYMOUTH ROCKS.

ORIGIN AND HISTORY.

The mind cannot conceive of a more handsome and appropriate companion for the Barred Plymouth Rock than the White Rock. Often in our boyhood days, while reading the stories of Sindbad, the Sailor, in the "Arabian Nights' Entertainments," we pictured to ourselves the size, strength and power of flight of that formidable and fortuitous bird, the *White Roc*, that was capable of lifting elephants from the plains, that rescued so many travelers, heroes, castaways and adventurers from the jaws of death, and carried them in its huge talons over seas and mountains to other lands, where pleasure, wealth and beauty awaited them. Little did we think then that the day would come in our time when the great *White Rock* of the western world would carry off thousands at a time, not in its talons, but in admiration of its grandeur, beauty and usefulness.

In the race of competition between the new breeds—White Plymouth Rocks, White Wyandottes, White Javas, White Langshans, White Dirigos, White Minorcas, Snowflakes, etc.—a fearful struggle is being carried on for the mastery, as to which will be the "cock of the walk." Of course, it is not by the breeds themselves, but by their ardent originators, admirers and enthusiasts, who display great ingenuity and generalship in bringing each variety in full force before the public, to both awe and impress the American Poultry Association into terms of recognition and favor.

The White Plymouth Rock is an offshoot from the Barred Plymouth Rock, and originated in the hands of Mr. O. F. Frost, of Maine, About nine years ago, a neighbor of Mr. Frost was breeding the Essex strain, and, to his surprise, some white "sports"

appeared among the broods. These he considered of no value, but Mr. Frost obtained the first pair, and these he bred together, and though the task was anything but encouraging in the beginning, subsequent efforts in the way of careful selection and breeding developed all the excellent and grand qualities of their progenitors, excepting color.

We cannot blame a fancier of the new breeds (nor, for that matter, of the old ones), who is chock-full of ardent enthusiasm, and who expects to reap some precious fruit from his favorite breed, to magnify their qualities and sing their praise far and near; but when it comes to fulsome adulation, to overrating and to ranking them far superior to their colored progenitors, it is saying what cannot now nor never could be borne out by any scientific facts or research.

We are impartial on all breeds, and endeavor to do justice to all. We have, perhaps, written more on standard breeds than any other writer in this country, and never bestowed praise on one at the expense of the other. However, we are willing and glad to concede to the White Plymouth Rocks many advantages over their colored cousins in the matter of mating and breeding; and these advantages will be a great help to the young fancier, and also to those who are contemplating embarking in the poultry business, who heretofore dreaded breeding fancy fowls for sale and exhibition on account of the manifest difficulties of judiciously mating them for such purposes.

It is claimed that the White Rocks breed truer to color than any of the new white varieties. If "off" specimens appear, they are generally Dominique in color, but even these are few and far between, considering the short time since their coming among us. If the White Rock is a "true sport," it is very apt to breed true to color, on the scientific basis that there are no chemical coloring properties in its composition; but if it is a "reversionary freak," it will "throw forward as well as backward" for some time to come. But as they have been carefully selected and bred for the past eight years, there is every promise that they will breed as true to color as any new-made breed. Apparently, there is a bright future for the White Plymouth Rocks, though for a while some strains may disappoint the breeder in the matter of purity of color; but we expect they will do fairly well and come up at least to reasonable expectations, if not to our brightest and fondest hopes and desires, before many years pass by.

Like their excellent progenitors, the White Plymouth Rocks

are plump, compact, full breasted and bodied fowls, vigorous and hardy, good layers and capital flesh formers, handsome in looks and carriage, showing well on the lawn or in the exhibition coop, their rich red facial appendages contrasting so nicely and agreeably with their pure white plumage, as fair to view as nature or art could make them; easy to mate and raise, and, in fine, possess almost all the essential points of an ideal breed. The name itself will be a pass-port to their fame, for whoever has heard of the noted Barred Plymouth Rock (and their name is legion), will take it for granted that their offspring must be a "chip off the old block;" and whether in the order of things or by a "freak of nature," they will be worthy of a place in the front rank, where beauty and utility go hand in hand, and where the tried and the good "old reliables" pose in self-reliant composure.

CHARACTERISTICS.

It is just and fair to all concerned to infer that no new variety breeds uniformly true color and markings, until all the elements of its former composition are bred out. With solid-colored varieties there is less difficulty in establishing the color, because there is but one general color to establish. It may be a sooty black, a sickly buff or a creamy white in the beginning, but a few generations of skillful mating, care and good food will make a sooty black a brilliant jet black, a sickly buff a rich buff, and a creamy white a pure white.

We all know how difficult it is to get well-marked birds from even the oldest breeds. Why, then, do we insist on getting equally as fine birds from new varieties, that are not as many months old as the others are of years? The beginner with a new variety should bear this in mind before buying them, and not feel afterwards that he was cheated and badly disappointed.

The "mania" for new breeds nowadays gives license for the manipulation of everything approaching the breed in size and color; consequently, we have among the new white breeds many types and other characteristics forced into each breed; and all these were evolved by the shortest way known to the art of poultry breeding. Of course, there is no security against being cheated by purchasing such fowls for the "pure quill." The birds may be as good for utility as the pure-bred birds, but if you want a White Plymouth Rock, and pay a fair price for it, you don't want a White Dirigo, a White Erminette, nor a Snowflake.

It is best at all times to buy fowls from reliable breeders, not necessarily from those who have grown gray in the business, but from those who are honest in their dealings and always willing to make just amends for any errors of judgment or something unlooked for in the sale of eggs or stock. There are more opportunities for cheating in the poultry business than in any other, and there are more opportunities for those who sell eggs and fowls to show honesty of purpose, to show one of the highest of God's attributes to man, to show a heroic resolve to follow the Golden Rule. "You have my honest and hard-earned money. I sent it with implicit confidence, relying on your honesty; and though a stranger to me only in name, I trust that you will send full value for it." Here is implicit confidence in the honesty of a stranger, and the one who would betray that confidence, and send in return for the good money in his pocket something nominally valueless or something not near its value, if done knowingly and purposely, that man is dishonest and should not be trusted nor recognized in the circle of poultry breeders.

No doubt there will be many who will complain of being cheated in their purchases of White Plymouth Rock eggs and fowls, or that they have not received full value for the amount paid. Our advice in this case is, for the breeder not to sell eggs or fowls from impure stock, and if the amount is not equivalent to the value of the stock, taking its popularity, ready sale and rarity into consideration, return the money or state the case, and request the full value for the bird or birds you have to sell. Do not send out poor specimens at any price; they will eventually kill your business and name as a breeder.

There is no moral law to prevent unprincipled breeders from selling poor stock or selling impure for pure stock. But, at the same time, the purchaser of a setting of White Plymouth Rock eggs or of fowls should not expect to get all prime birds, though he may have paid a good price for them. In a setting of eggs the chicks may not all come pure white, but if three-fourths of them come true, there is no just ground for complaint; for, as we have stated before, there will be more or less "off-colored" birds in the breed for some time to come, and when the buyer is forewarned and the cause fully and sensibly explained to him, he takes his own risk and has no reason to complain afterwards.

There are those who publicly assert that their strains of White Plymouth Rocks breed true to name. They do in the general acceptation of the term. The same is said of Silver Wyandottes, and once in a while some come with single combs and others with feath-

ered legs. The White Plymouth Rocks in this respect breed as true as the Silver Wyandottes.

WHAT OTHERS SAY.—Mr. Frost, commenting on an article which appeared in a western publication regarding the appearance of different types and creamy color of plumage in some birds sold as White Plymouth Rocks, says: "It may be true as stated that 'we find a great variety of shapes, shades and sizes' in the White Plymouth Rocks, but I do not think it is the natural consequence of their not being admitted to the Standard, but more likely the great demand for them the past year has caused such cross-breeds as the Dirigos and Snowflakes, which greatly resemble them, to be sold as White Plymouth Rocks. Until they are admitted to the Standard, we have a guide for breeding them in the standard for common Plymouth Rocks, which should be the same for them in weight and all their points, with the exception of color. If breeders of this variety have used this standard with good judgment, I see no reason why this breed should lack uniformity."

We have here an emphatic declaration of their breeding to uniformity, if the breeder used the Standard for Dominique-colored Rocks with good judgment.

OTHER TESTIMONY.—An old and experienced breeder says: "The above," referring to illustration of White Plymouth Rocks, "is an offshoot from the Plymouth Rock proper, and was originated by Mr. Frost, of Maine, and by careful selection and mating for eight years the breed has now been brought about to perfection. It will be seen by comparison with the regular Plymouth Rock, that they have about the same shape, style and general appearance, except in color, of their speckled progenitors. Experience in originating and breeding them has demonstrated that they have now reached a point where they breed truer to feather, shape, size and markings than the breed from which they sprang. In fact, in a flock of one hundred chickens, you will not be able to find one with an 'off-color' feather or other marked disqualification. Their legs, beak and skin are a bright lemon-yellow. They are plump and full-breasted, making them among the best of table fowls. Abundance of fluff is provided them, which keeps up the warmth in winter, and enables them to be placed among the desirable winter layers. Their sitting proclivities are about the same as the Plymouth Rocks. They lay a fair-sized egg, of a somewhat orange-yellow color. As a "general purpose" fowl, we can unhesitatingly recommend them. They are quite domestic in their habits, and are content to remain in an ordinary

enclosure. On the whole, our experience with them has been so favorable, that we cannot but believe they are bound to be the 'coming fowls' of America."

"This new breed, which has but lately been brought into general notice," says an experienced breeder, "is becoming immensely popular. The first account we have of their origin dates back to 1878, when a gentleman in Maine, who was breeding the Essex strain of Plymouth Rocks, observed that some white 'sports' had resulted from his hatchings. He did not consider them of any value, but a neighbor, Mr. Oscar Frost, obtained the first pair of them, and conceived the idea of trying to work on this foundation to establish a White Rock. The first year or two he met with rather poor success, and, as Dr. Twitchell said in the *Maine Farmer* at the time, they were a 'sorry-looking lot.' But Brother Frost was not discouraged and patiently worked on, breeding them on the principle of the 'survival of the fittest,' and in about five years he was the owner of a very fine flock of pure White Rocks, which bred very true to color. About this time the writer procured a setting of eggs from Mr. Frost, from which he obtained ten fine, pure-white chickens, and we have been breeding them ever since with uniform success — not an 'off-color' chick ever appearing in our flock.

"We can now speak from experience of this breed, and also from the experience of hundreds of patrons who have been breeding them from Mr. Frost's, Dr. Twitchell's and our own yards. We must certainly admit that they inherit some of the faults of their progenitors, viz., in leg markings and twisted combs — that is, to some extent; but they have the great virtue of always breeding true to color of plumage, which could not be affirmed of the speckled Rock. The irregularity of leg coloring and shape of comb, alluded to above, which occurs in some specimens, can, by careful selection, be bred out, and then we will have a most perfect breeding fowl.

"For market purposes the White Rock will take its place at the 'head of the table,' as its pure white plumage and yellow skin and succulent flesh make it the epicure's *sine qua non.* But just at present, with the living carcass worth about two dollars per pound, it would not be a matter of economy to pot it.

"Now, we wish to speak of its laying qualities—and here we are afraid many will impugn our veracity, when we state from our own and the experience of others, that the White Rock is one of the greatest layers in the world, and we will not even except the Leghorn family. Mr. I. K. Felch, Mr. Frost, Dr. Twitchell, and all who

have bred them, bear testimony to their wonderful egg productiveness. From a flock of thirty-two fowls, five old ones and twenty-seven yearlings, which began laying in February, we have averaged continuously from fourteen to twenty-four eggs daily, and during the breeding season of April, May and June, the average was fully twenty-eggs daily. The young chicks are vigorous and healthy, as are the older ones. They are great foragers, as well as generous eaters; but they give back in eggs and flesh abundant recompense for all. In size they are about the same as the Plymouth Rocks, in shape perhaps a little rounder, and no prettier sight could be seen than a flock of these white beauties."

Another breeder, who has evidently caught the "White Plymouth Rock fever," says: "The demand is increasing for a pure-white fowl, having yellow skin and fine flavored meat, in connection with superior laying qualities; and there is no purely American fowl which has so firmly established itself among those interested in poultry raising, as the White Plymouth Rocks. They were known only a few years since, and the demand for them this season shows that their good qualities are not illusions, but facts, the guaranty for which is shown in the ready market for fowls and their products. They originated by 'sports' from Plymouth Rocks proper, but have now reached a point through careful breeding where they breed true to feather, size and markings. Their plumage is pure white, and they are plump and full-breasted, making them among the best of table fowls. They are strong and vigorous fowls, and not subject to the diseases common to ordinary chickens. They are excellent layers of large, rich brown eggs, and are such enormous layers that they have scarcely any time for sitting, but when they do sit they are very faithful and make excellent mothers. Take them as a general purpose fowl, they are better for farmer and fancier. They are contented in a small enclosure, and are gentle and domestic in their habits. The chicks from the eggs often show colored markings, but when they first shed their downy covering and put on their regular feathers, they are pure white. As show birds, their noble, dignified carriage and beautiful plumage have no equal, and are sure to give unqualified satisfaction."

The reader will have noticed in the two preceding quotations, how ardent admiration for this new breed has carried the writers (in our estimation) so far as to overrate their laying qualities, and one other point, namely. "The White Rock is one of the greatest layers in the world, and we will not even except the Leghorn family;'

"not subject to the diseases common to ordinary chickens;" "such enormous layers that they have scarcely any time for sitting."

Such exaggerated, overrated or overestimated (whichever name you may please to call it,) ideas of any new or old breed, tends to give a too-high coloring to the breed, and tends to false conceptions in the minds of beginners. It may be true, as stated, that the writers in question have an exceedingly prolific strain of layers, and that their birds are fortunately exempt from the ordinary ills of other breeds But the statements are made to cover the whole breed, and not any branch or strain, and it is in this we take exception to the statement. If there is existing to-day a breed of sitting fowls that is so prolific they cannot find time to sit, and not subject to the diseases common to ordinary chickens, we should like to see and own some, for that upsets our preconceived notions about fowls.

It is well to give due merit to a breed; it is well for one to praise his own fowls when they prove more than ordinary good layers; but every experienced breeder knows it is more in the strain than in the breed, and while we have some breeds which excel as layers, we often find strains among those that we class as ordinary layers, which excel, or at least equal, some of the strains of the prolific breeds. It is in the power of every breeder, no matter what variety he breeds, to make his fowls more prolific if he but devotes a tithe of as much time to the selection of the steadiest and best layers as he does to their plumage and markings.

Few, perhaps, will take it for granted that the White Plymouth Rocks excel the Barred Rocks in prolificacy. It is not reasonable to expect it, unless they receive higher cultivation and more skillful selection. It is enough to say, they have advantages over the Plymouth Rock proper in the way of mating and breeding for the show-room and for sale to customers, and, perhaps, for broilers, and it might be added that they show a more pleasing sight on a lawn or in a show-pen, on account of their rich red combs, faces, earlobes and wattles, and bright yellow legs and beaks, contrasting with their pure-white plumage. But it is not good policy, neither is it just nor reasonable, to make loose statements by which the fancier of the white variety seeks to build up one breed and tear down the other.

There is no fear but the White Plymouth Rocks will enjoy their full measure of popularity, now they are admitted to the Standard, and take their rank with the best of the old breeds; there is no fear but they will be the central pivot for all the new white breeds hav-

ing affinity to them to cluster and be absorbed; there is no fear but their merits will precede them "beyond the seas;" and there is no fear but those who breed them purely and highly in the scale of merit will get their reward.

WHITE PLYMOUTH ROCK STANDARD,

AS PROPOSED PREVIOUS TO THE ADMISSION OF THE BREED BY THE AMERICAN POULTRY ASSOCIATION.

Disqualifications.— Birds not matching when shown in pairs; feathered shanks, or any color than yellow; enameled white in ear-lobes; combs other than single, twisted or falling over to either side; deformed beaks; crooked backs; wry tails; twisted feathers in wings; brassiness or colored feathers in any part of the plumage; cream color in cocks objectionable, and to be cut severely.

Standard Weight.— Cock, nine and one-half pounds; hen, eight pounds; cockerel, eight pounds; pullet, six and one-half pounds; deducting two points per pound for any deficit from the standard weights.

SCALE OF POINTS.

Symmetry	10
Weight	10
Condition	6
Head	6
Comb	8
Wattles and ear-lobes	8
Neck	6
Back	8
Breast and body	12
Wings	6
Tail	8
Fluff	5
Legs and toes	7
	100

DESCRIPTION OF COCK.

Color: White throughout.

Head: Of medium size, and carried well up. Beak yellow,

short, stout, regularly curved. Eyes bright bay, large, clear and bright.

Comb: Bright red, single, fine in texture, small, perfectly up right and straight, with even and well-defined serrations, and free from side sprigs.

Wattles and Ear-lobes: Wattles bright red, medium size, and well rounded. Ear-lobes bright red and medium size.

Neck: Of medium length, well arched, tapering, with abundant hackle.

Back: Broad, of medium length, and with saddle feathers abundant.

Breast and Body: Breast broad, deep, full and well rounded. Body the same.

Wings: Of medium size, and well folded against the body; wing-bows and points well covered by the breast and saddle feathers.

Tail: Medium to small, not too upright, short feathers moderately expanded; sickle feathers and tail coverts well curved.

Fluff: Moderately full.

Legs and Toes: Thighs large and strong, well covered with soft feathers. Shanks medium short in length, stout in bone, set well apart, and yellow in color. Toes straight and strong, medium length, well spread, and yellow in color.

DESCRIPTION OF HEN.

Color: White throughout.

Head: Of medium size and carried well up. Beak yellow, short, stout and nicely curved. Eyes bright bay, clear, large and bright.

Comb: Bright red, single, small, low, erect, perfectly straight, with small serrations, and free from side sprigs.

Wattles and Ear-lobes: Wattles of medium size, bright red and well rounded. Ear-lobes bright red and of medium size.

Neck: Medium length and tapering nicely.

Back: Broad and of medium length, slightly cushioned from centre of back to tail.

Breast and Body: Breast broad, full, deep and well rounded. Body broad, deep, full and compact.

Wings: Medium size and snugly folded against the body.

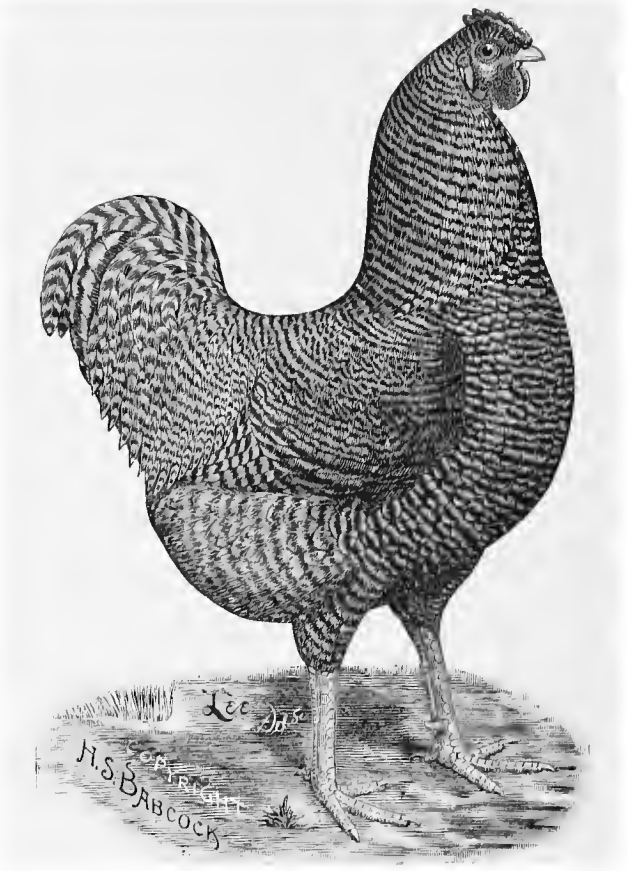
Tail: Small, comparatively upright and rather pointed.

Fluff: Soft and moderately full.

Legs and Toes: Thighs large and strong, and well covered with fluffy feathers. Shanks medium short in length, stout, set well apart, yellow in color, and of fine bone. Toes of medium length, well spread and yellow.

G. M. TWITCHELL, *Secretary.*

This standard differs in *weight* and *scale of points* from the one proposed in September, 1886: Cock, nine pounds; hen, seven and a half pounds; cockerel, seven and a half pounds; pullet, six pounds.



PART THIRD.

Pea-Comb Barred Plymouth Rocks.

The commendable spirit of progress and improvement that has ever characterized the American fancier in his laudable work of beautifying the plumage, combining royalty with gorgeous coloring in feathers, and tasteful and comely forms with general utility in our domestic breeds, and the regularity with which they reproduce their like, year after year, in our runs and upon our estates, in many thousand instances of their kind, with scarcely a variation or shadow of changing, is equaled only by the grand conceptions of his fertile

and inventive mind in creating new breeds and varieties, more beautiful, more attractive and more useful in one way or another than those of earlier times, and much better adapted to our variable and frigid climate.

The Pea-Comb Barred Plymouth Rock is a recent acquisition to our American varieties, and a worthy relative of the Single Comb Barred, and White Rocks. It was favorably known for some years back, and bred in a quiet way until the pea-comb was well established and in comformity with other standard points. The question of utility has engrossed the attention of many of our breeders of a practical turn of mind, and though the Standard Plymouth Rock was always considered an ideal breed for practical purposes in point of facial appendages, the comb being medium in size with a tendency to breed and keep it within the limits of moderation, and sufficiently small to resist the pinching frosts of winter, if exposed, but the severity of some of our past winters, and the general distribution of the breed throughout Uncle Sam's broad domain, buffeting the cold winds of the eastern seaboards and bearing the vigors of nothern "blizzards" about squatters' homesteads, showed that the single comb was not proof against severe frost. In this point alone, the pea-comb is an improvement, no other merit is claimed for this new variety, over the single comb breed, no other would receive consideration, recognition or approval.

Breeders of Pea-Comb Plymouth Rocks claim the pea-comb a "sport" from the single comb breed. This is within the scope of the possibilities, and might honestly be expected from a fowl having such composite characteristics, but as the crop of "sports" in the past decade has been so remarkably abundant, and as the Yankee fancier is distinguished for the manipulation of new breeds, varieties and unique features, some may question the possibility of the allegation, as they have done on other occasions. However, the Pea-Comb Plymouth Rock has come to stay, honored and attended with the commendations of a galaxy of well known breeders, and honestly and fairly admitted to the Standard of Perfection with the White Plymouth Rocks, at the convention of the American Poultry Association, held at Indianapolis, Ind., January 25, 1888.

Judging by the tone of remarks expressed on the motions of admitting the Pea-Comb Barred Plymouth Rocks and White Plymouth Rocks to the Standard, it reflects much credit on the members, for the liberal spirit, entirely free from envious opposition as manifested throughout in their deliberations on accepting these new

varieties. And to the credit of the old Standard Plymouth Rock breeders be it said, that they cheerfully gave influence and favor to their speedy recognition and approval.

It would only be a repetition of all we have written on the characteristics of the Single Comb Barred Plymouth Rocks in this book, if we attempted to describe the Pea-Comb variety. All the intrinsic qualities, color and tinge of plumage, shade and depth of barring, shape and size of head, color of eyes, color of beak and legs, natural color of comb, ear-lobes and wattles, form and carriage, comeliness and physical beauty, prolificacy and flesh qualities of the one are exactly the same as in the other. No deviation from any of the Standard requirements shall be allowed in the other, except the comb: "*the Standard for the Pea-Comb Plymouth Rock be the same as the Standard for the Single Comb Plymouth Rock, with the exception of the character of the comb and wattles, which shall be the same as the Brahma.*"

PART FOURTH.

MANAGEMENT, CARE AND FEEDING.

ADVICE TO BEGINNERS.

There is but one broad rule of action for the beginner, and that is to procure good stock on the start, take good care of them, breed them intelligently, and feed them properly. Do not begin with the idea that there is a gold mine in the poultry business, because you read of some old fancier getting fifty, seventy-five or a hundred dollars for a pair of Plymouth Rocks. Such prices are seldom reached, and by far the greater number of breeders are satisfied with five dollars per pair, and then the business pays well. At present there is such a strong competition in Barred Plymouth Rocks, that we should not advise the novice to depend too much on fancy prices, and to make the breeding and rearing for market an auxiliary to occasional sales, is the safest course to pursue. So much cannot be said of the breeding of White Plymouth Rocks, because they are a new breed with a great and rising name, and for many years to come they will command fancy prices—few reaching the food market. However, bear in mind, and carry the sublime view in your heart and soul through life, to be honest in your dealings, and you will merit success and reliability.

FOWL HOUSES.

Space will not permit us to go into details, but should rather advise plain and comfortable buildings for poultry, that would combine coolness in summer and warmth in winter. The best site for a house is an elevated one, because it secures dryness. It should be ploughed or spaded, and the earth thrown towards the centre until the interior is raised a foot or more above the surroundings. The

style of the house is not as much a matter of importance as that of the situation. It should, if possible, face the south or south-east, so as to catch the morning sun in winter, and it should be high enough in front to admit the attendant without stooping.

INTERNAL ARRANGEMENTS.

SUN LIGHT.—Light in the poultry house is an absolute necessity, and the inmates must have it to be healthy and cheerful. For the purpose of light, let your sash space be ample, so as to let in as much sun light and heat as possible in winter, but too much glass will cause a variation of temperature when the sun goes down. In summer, the windows can be taken out and screens put in their place, or the glass can be whitewashed on the inside to prevent the rays of the sun entering the house.

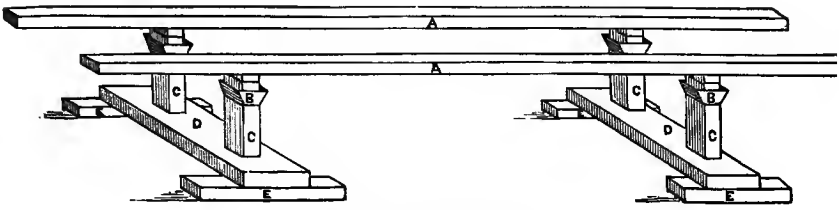
VENTILATION.—Every poultry house should be thoroughly ventilated every day, both in summer and winter. There are many ways to ventilate, but the one of admitting fresh air from the top, and the escape of foul air from within, through a pipe-like square box, from four to six inches square, tightly put together, reaching within four inches or so from the floor, and going out through the roof, is the best. The box on the outside should be surrounded with a larger box, capped and perforated, or with lattice work.

Ventilation is of the greatest importance to fowls, for they will not thrive nor lay well without it, no matter how well fed and cared for they be otherwise. Impure air generates vermin, poisons the blood, saps the foundation of health, and predisposes the birds to cholera, roup and other diseases. The ammonia arising from their droppings, the deleterious affluvia from their bodies and feathers, and the noxious gases from their respiratory organs, combine to render close and crowded apartments unwholesome.

DUST BATHS.—A dust bath should be in every hennery, where the sun can shine on it, and where the fowls can cleanse and enjoy themselves. Road dust is the best, and if mixed with sifted coal ashes, and a pound or two of sulphur thoroughly incorporated in it, so much the better.

PERCHES.—The perches for Plymouth Rocks should be four inches wide, beveled on the sides, or better, a large round pole, sawed through, the round part for top, as it strengthens the muscles of the legs, and is more naturally adapted for grasping with the claws. It should not be over thirty inches high, fixed level, and

movable when needed for cleansing. A tail board to catch the droppings is useful, as it can be easily cleansed, and it should be well dusted every day, to neutralize the affluvia, and save the valuable qualities of the droppings for the garden.



Plan of Portable Perches.

AA, perches; BB, kerosene cups; DD, cross pieces; EE, foot pieces; CC, standards. This plan prevents chickens from crowding at ends of perches. The ends do not connect with side or ends of building. The kerosene cups prevent vermin from working to and from any part of the building or on the chickens at night. They are not expensive, and in many cases the standards can be mortised in the floor beams, and then require only four pieces of timber. These perches are made of 2x4 pieces, they are 14 inches high, and 22 inches from center to center of perch. The perches are not mortised all the way through, and are not fastened, so they can be lifted off and the whole thing moved out in a few moments.

FEED BOXES.—Substantial feed boxes, easy to access for the fowls, should be provided, and also placed where mice or rats could not reach them. One's own ingenuity would suggest different plans for making boxes or troughs that would keep the food clean, and prevent the fowls from tramping or perching upon them. Boxes for gravel, broken shells, old lime, charcoal and bone meal, iron vessels for drinking water, earthenware fountains, and nests in secluded places complete all the necessary fixtures for a fowl house.

FLOORS.—We are partial to loose earth for floors, as it seems to be the most natural. If board floors be used, they should be covered with sand or earth to the depth of three inches, but if not, the droppings adhere to the boards, the ammonia is liberated, and the liquid absorbed. Every board floor, for either young or old fowls, should be covered to prevent sore feet and weakness of legs. Loose dry earth for floors is, however, to our way of thinking, the most suitable.

CARE.

GENERAL TREATMENT.—In the general treatment of Plymouth Rocks care should be the first duty of the breeder; for it has much to do with improving their looks, size, weight and useful qualities. Care, however, does not imply that they should be stuffed like a bolster nor coddled by over zeal or mistaken kindness. Care is that which bestows a kind hand and supplies their daily wants.

CLEANLINESS.—We cannot too strongly impress on the breeder the absolute necessity of scrupulous cleanliness in and about the fowl house. One may feed his fowls on the milk and nectar of the gods, all the developing powder and egg food that Yankee ingenuity could devise and all the varied cereals of the earth, and without cleanliness, all would be of no lasting use.

The floor should be kept clean, the perches frequently saturated with kerosene, the walls thoroughly whitewashed and the birds dusted with insect powder. Many a piping chicken and many an emaciated hen can lawfully curse uncleanliness for the lice on their bodies and the ailments which mark them for life.

EXERCISE.—Ever since the day Adam quitted his rosy couch at Eden, all living things, the festive tramp included, are forced to take more or less exercise to get their daily food. Even the sloth, the very embodiment of indolence and ease, takes exercise by climbing through the branches of the *Imbauba* (Cecropia) tree.

One of the secrets of raising Plymouth Rocks and other large fowls successfully, is to make them be up and doing, with a "heart for every scratch." If allowed to remain inactive and receive plenty of hearty food, they will become loggy and lazy and fat. Excessive obesity in man, beast or bird is a disease, for it affects the reproductive organs to the verge of sterility; it affects the egg producing functions of the hens; it causes inflammation of the egg passage, "bagging down," and frequently apoplexy and death.

If, however, it becomes necessary to keep Plymouth Rocks in close confinement, a wise provision of the keeper would be to make them scratch for a large share of their supper through the day. Broken corn, tail wheat, or millet buried in the loose earth of the floor, or in a heap of sand, coal ashes, leaves, cut straw or chaff, would give them exercise by scratching for the kernels. The work of scratching would produce warmth, and warmth is conceded to be one of the best elements for the production of eggs. Inactivity is the bane of domestic fowls; it engenders vicious habits and morbid

desires, such as feather plucking and egg eating, while exercise acts on the contrary, for it stirs up the blood, keeps down internal fatness, and all tendency to laziness, lousiness and consequent ailments that follow in their train.

THE BREEDING STOCK.

GOOD STOCK.— Begin with good stock, not necessarily high prized birds, for many of this class are miserable failures, as far as reproduction is concerned, but birds that will honestly score eighty-five points or more, an eighty-five point Plymouth Rock is a good bird for all round breeding, but if one aims for high prizes, birds of greater excellence are needed.

CONSTITUTIONAL VIGOR.—The possession of good stock, healthy and vigorous, is a matter of paramount importance to every breeder. Too much pains cannot be taken in selecting those birds that have constitutional vigor, well and clearly marked, and show they are from good stock getters, for a bird in whom excellence is constitutional is more apt to transmit this excellence in all its developed power and beauty to its progeny.

INCESTUOUS BREEDING.—In-breeding consists in the mating of birds which are related in blood to each other. The relationship may be near as that of a brother and sister, or remote, a mere fortieth cousinship, for instance ; but if there be any relationship between the birds which are mated, it is in-breeding.

Breeding in and in continuously is the most fruitful source of trouble we have to contend against in keeping up the fertility, stamina, a constitutional vigor and hardiness of our stock after having secured some temporary improvements or established some desirable points. For a while incestuous breeding will give many uniform points in size, color and markings, and these may be retained as long as the vitality of the breeding stock lasts, but sooner or later it will begin to show in the non-hatching of a large percentage of the eggs, the chicks die in the shell or too feeble to liberate themselves, many come deformed or in the shape of "sports," for all the defects of past generations meet no counteracting merits in the opposite sex but simply a reproduction of themselves—the defects being more potent in reproduction.

OVERCROWDING.—The evil effects of overcrowding birds in houses or runs will show in a short time. Fowls cannot bear to be massed ; it matters not how thrifty they may be when gathered from their runs, a few weeks of close cooping will show in their looks and

movements ; they will become dumpish and sickly ; the cocks will lose their natural vigor and amative propensities ; the hens will cease laying, the lice will hold high carnival upon their bodies, and serious loss and bitter disappointment will inevitably result.

PLYMOUTH ROCKS FOR THE POOR MAN.

When we look back through the vista of ages, we see as countries grow old, the rich become richer and the poor poorer, and nothing to bridge this great gulf between poverty and wealth, but economy, frugality and industry. There are thousands of poor men in our cities, towns and villages, who live from hand to mouth from one year to another, who could in a measure lighten their burdens and make the hours of relaxation more pleasant and profitable, if they took up fowl raising for their own use, for sale in market, or to private customers at higher prices.

Plymouth Rocks would be just the breed of fowls that would suit the poor man. They are so easily kept and yarded, their eggs or their living product would find ready sale at any time of the year. The business itself would stimulate one to industry and independence, and in time a handsome revenue would accrue from the sale of eggs and chickens and place the breeder above want. Poultry keeping, too, is considered lucky; indeed, there is a traditionary saying among the Aryan race "There's luck in fowls," and we find the same race in every part of the world engaged in the cultivation of poultry.

PLYMOUTH ROCKS FOR THE FARMER.

To the farmer, utility is of more importance than gaudy feathers. "Beauty is that beauty does," is an old saying, and the average farmer believes it, too, for he does not want a strictly fancy fowl, and when he looks on the stalwart Plymouth Rock robed in spotless white or in plain home spun dress, it brings to mind the good old Dominique that was the pride of the farmer and the joy of the farmer's wife.

The son of the soil wants a breed that will mature quickly, make good broilers early in the season, turn a ready dollar when he has no farm product to sell, that can stand the rough and ready usage of the farm, that can lay generously in cold weather, that will weigh heavy without much offal, that can take care of itself for nine months in the year and that can be made profitable living or dead.

PLYMOUTH ROCKS FOR THE FANCIER AND MARKET BREEDER.

None of our standard breeds in the past ten years have had such a "run" as the Plymouth Rocks. Although the average fancy prices were within the limits of the purchaser's means, yet there was such good demand and ready sale that the profits on this breed far exceeded that of the Brahmas. The prospects for the future look encouraging, the white variety is bound to lead all the new breeds and will prove a profitable source to their breeders.

In a commercial point of view, our wide awake poultrymen begin to see there is a handsome profit in raising fowls for the market, if the business be conducted intelligently and economically. Raising early chicks for market and taking advantage of good demand for eggs will always pay, and everything indicates that the demand for them is increasing. With the rapid increase of our population, higher intelligence and better modes of living, we are sure the demand will tax all the energies of our poultrymen to supply, and eggs and poultry flesh will form the great bulk of our meat food, for the higher we rise in intellectual force the greater our desire will be for such kind of food. The savage or the illiterate backwoodsman don't care for eggs or chicken, the wild bison or the bristled hog is more suitable to his nature, but the truly refined and intellectual mind always likes eggs and chicken, as they are intellectual food.

Broilers are in demand about the first of March, and young ducks about the first of June. Plymouth Rocks sell best for broilers, In all our large cities, broilers, weighing from three-fourths of a pound to a pound in March will bring from $5.00 to $6:00 per dozen; from one and a quarter to two pounds in April, $6.00 to $9.50; from from one and a half to two pounds and a quarter in May, $8.00 to $10.50. These figures ruled even in Chicago last year, and are taken from the books of a South Water street commission dealer.

PREPARING FOR EXHIBITION.—The practice of cleansing and preparing birds for the show room is much in vogue in England, but owing to the severity of our climate in winter, and the danger of taking cold, the practice is not carried on to a great extent among our exhibitors. The process of cleansing the show birds is simple, when properly done, but in the case of white or light colored fowls, it requires more care and skill. The best way to remove dirt and stains from the plumage, is by clean, white or transparent soap, mild, without much free alkali. After the feathers are first dampened

from head to tail, then with a stiff brush in clean tepid soft water, brush briskly downward from neck to rump till no suds is perceptible. A clean, soft sponge is to be used to follow the brushing. Be careful to rub down every feather with it several times, so as not to ruffle, and then go over the same course again, using clean water only. When the plumage is dry, a second careful brushing or combing will smooth and arrange the feathers nicely.

Of course, it is understood that the birds must be fed on certain kinds of food preparatory to the time of showing, to get them in proper condition. A mess of barley and buckwheat for breakfast, vegetables, boiled rice and milk, with a handful of coarse, brown sugar stirred in, and allowed to cool, or corn meal boiled in milk for dinner. After the mid-day meal, a handful of hemp seed and sunflower seed, and in the evening a whole mess of sound corn and wheat.

The day before taking the birds to the show room, sponge their beaks, faces, combs, wattles and shanks with a mixture of alcohol and olive oil, then rub these parts off clean, and the fowls will look bright and lively, if they have not gotten cold by the washing. To avoid this, the birds should be washed in a warm room, and placed by the stove or fire place until perfectly dry. A warm mess of mush, well seasoned with cayenne pepper, the drink, too, made stimulating and heating, and a warm bedding of fine cut straw in their coops will help them a great deal.

MATING.—February is a good month to make up your breeding pens if you intend to set the eggs under hens, but if wanted for incubators, January is better. The number of hens to be associated with a cock depends on the season, the breed and the limits of their runs. In early spring, when the birds are confined, six hens with a cock are enough in order to secure fertility, for the male is not as amative then as a month or two later.

Nothing is gained by having the chicks come out too early, unless one has a close glazed house or warm coop to set the hen in and raise the chicks until the weather permits them to have a run out of doors. March is early enough in our northern climate to have the chicks come out. April and May, too, are good months for Plymouth Rocks, but if breeding for market, the earlier the better for broilers.

FEEDING.

FEEDING THE YOUNG.—Next in importance to comfortable shelter is generous and judicious feeding. The first two weeks they

should have hard boiled eggs chopped fine, and stale bread crumbs and scalded milk, baked corn bread crumbled in scalded milk, coarse oatmeal, broken wheat, millet seed, cut onions, steamed rowen, shreds of lean meat, and such like food that suits the tender stomach and digestive organs, and that is nutritive. After this time coarser and stronger food may be given, but always accompanied with milk, if it can be gotten handy. A variety is best at all times, so it can be broken corn, baked bread, scaled oatmeal and barley-meal, cornmeal and middlings, broken wheat, vegetables, meat or fish in rotation.

FEEDING THE OLD.—A variety of food is also best suited for adult fowls; ground oats and corn, wheat, buckwheat, barley, and a little corn, vegetables and roots, middlings, bran, fresh meat or insects will make an acceptable variety. It is best to keep the fowls in good condition without being fat, if eggs and healthy chickens are the most desired.

EFFECTS OF FOOD.—The effects of food on the animal economy is therefore a subject of great importance, whether it be applied to man, animals or birds, and the words of Letheby fitly apply to this subject. "That the various alimentary substances made use of by man and animals, contain at least four classes of constituents, each of which performs its own assigned function in the living animal economy. If the substance contains nitrogen, it seems most fitted for the nourishment of tissue, and has been called plastic or nitrogenous; if it is deficient in nitrogen, and has an excess of carbon or hydrogen, it appears to undergo combustion in the body, and is called hydrogenous, or a respiratory element of food (hydro carbon); if it is fatty in its nature, it performs the double duty of maintaining animal warmth, and of assisting in the assimilation of nitrogenous compounds, and lastly, if it is saline in its quality, it goes to build up the solid textures of the animal frame, and aids the important work of carrying new materials into the system, and old or effete matter out of it."

Man, animals or poultry cannot maintain health if their food does not contain all of these constituents, and common instinct with experience, tells us that these classes must be associated in due proportions, under a variety of modifying circumstances.

PART FIFTH.

Diseases and Treatment.

As we have already trenched on the limits or this book, we can only give but a few of the most common diseases, with brief descriptions of their symptoms and treatment.

Cholera.—This disease is aptly called the "scourge of the poultry yard." A bird which falls a prey to cholera, becomes nerveless; it staggers and its wings droop; its ruffled feathers make it look like a ball; it is overcome with intense drowsiness, and if one makes it open its eyes, it seems as if disturbed from a long sleep; the eyelids soon close again, and generally death overtakes it where it stands, after a noiseless agony; occasionally for a few seconds its wings quiver. There is also associated with this disease, severe diarrhœa, which first comes thin and frothy, and later, yellow and green discharges, and the comb and face turn purple.

Treatment: — There is no specific known for cholera, except, perhaps, inoculation by cholera virus, though by the number of so-called cures before the public, it seems to yield to treatment in some stages. The investigations of Pasteur, Woritz, Peroncito and Touissaint, show it is caused by a living organism which, in countless numbers, attack the blood and all the vital parts.

This disease calls for heroic treatment, and if half is saved by the experiments, it is much better than to allow the disease to run its course. In all diseases of an infectious nature, the sick birds should be removed to clean, comfortable and airy quarters from those that are well. Calomel and blue mass in two grain doses, or four grains of blue mass mixed with two grains each of gum camphor, cayenne pepper and rhubarb, divided into four parts—one to be taken every four hours, and followed with a small dose of castor oil after the medicine has had time to work, is a treatment which with

some has proved successful. Give the Douglas Mixture to drink. A very strong decoction of oak bark or peach tree leaves is recommended for stopping the discharges. Another remedy is carbon (charcoal), one pound; sulphur, one pound; sulphate of iron (copperas), one-half pound; calomel, ten grains; salicylic acid, one drachm; ground to a fine powder, and thoroughly mixed. Dose, a tablespoonful in moist meal for twelve fowls once a day. Another medicine is rhubarb, five grains; cayenne pepper, two grains; laudanum, ten drops, every three hours, with a little brandy between doses. Kerosene is recommended, but it should be used with meal, or on bread. Three or four drops to every bolus, and if the bird refuses to eat, cram it down its throat, the proportion should be a pint of kerosene to a pailful of meal.

Equal parts of cayenne pepper, May apple root and blue vitriol, thoroughly mixed and made into a pill the size of a garden pea, given every three hours, has proved very successful.

ROUP.—This disease is by far the most prevalent among poultry. The first symptom usually shows about the eyes, which become watery, and a clear viscid discharge at the mouth and nostrls is generally seen about the same time. At this stage it assumes the nature of catarrh, and is easily cured. In a few days discharges from the nostrils appear, the membrane of the air passage, throat and tear tube becomes inflamed, often the eyes swell up and close, and an accumulation of matter closes the eye ball. When the secretions become acrid, they cause purulent discharges, and when they get thick and hard about the nostrils, the case needs prompt attention.

Treatment: —First wash the head, eyes and nostrils with castile soap and tepid water, or with warm vinegar and salt, to which a little alcohol can be added. If a mild case, inject some of this preparation into the nostrils, and swab the mouth and throat two or three times a day. A solution of sulphate of zinc, say twelve grains to the fluid ounce of water, is excellent for the same purpose. Syringing the mouth and nostrils with water, in which enough permaganate of potash to give it a rich color is dissolved, is good.

After thoroughly cleansing the head, face and nostrils of matter, press out all you can from the nostrils and inject with a dropper or machine oil can, or insert with a feather the following mixture: Equal parts of sugar of lead, pulverized alum and acetic acid, when it becomes the consistency of thin cream, inject twice a day. This mixture will cure most every case. One ounce of camphorated oil

with five drops of carbolic acid, injected up the nostrils with a sewing machine oil-can once a day, is also good. Sulphate of copper, half a grain; cayenne pepper, one grain; hydrastin, half grain; copaiba, three drops; Venetian turpentine (enough), to make a pill night and morning. Lotion—Sulphate of copper, quarter ounce, dissolved in a pint of rain water, to wash out the mouth and nostrils if required. This is considered a specific among English poultry breeders. In diseases of the nasal membranes, throat or air passages, pills are too slow, because they are too far from the seat of the disease, and to be effectual to distant parts, they must work through sympathy. Tincture of aconite and nitrate of potash in the drinking water in the proportion of a teaspoonful of each to a pint of water, proves very successful, but in bad cases three drops of the tincture twice a day in addition to the medicated drinking water should be given. Feed sick birds on cooked soft food.

DIPHTHERIA.—This is a dangerous disease and contagious. The mouth and throat are filled with white viscous fluid, like thick saliva, with small white ulcers. It can be distinguished from cancer by the former showing several patches in the mouth and throat, while cancer seldom developes in more places than one at a time.

Treatment:— Iron and sulphur being specific for diphtheria, perchloride of iron for swabing and mixing in the drinking water and the patches frequently rubbed with sulphur, and sulphur blown down the throat with a stout straw or quill, will generally effect a cure. A teaspoonful of a solution of chlorate of potash, which is prepared by dissolving a teaspoonful of chlorate of potash in a glass of water, given three times daily, with a little in the vessel where the other fowls drink, is attended with good results. Sprinkle the mouth, tongue and throat with a mixture of chlorate of potash and burnt alum or powdered borax. Mix powdered charcoal plentifully in the soft feed, and give cayenne pepper in powder, two tablespoonfuls with one teaspoonful of salt, and put both into a half pint of boiling water; let them stand an hour and strain off the liquor. Next put this liquor into a half pint of strained vinegar and warm it over the fire. Of this medicine give a half teaspoonful every few hours.

DIARRHŒA.—This disease is often mistaken for cholera, by the color of the evacuations.

Treatment:—Five grains of powdered chalk, five grains of rhubarb and three grains of cayenne pepper, or one grain of opium and one of powdered ipecacuanha every four hours. Ten drops of laud-

anum in a teaspoonful of water twice a day is another help. A drop of chlorodyne in a half teaspoonful of water to a half grown chick, three drops to a grown fowl; syrup of lactaphosphate of lime in half teaspoonful at a time is also helpful.

CANKER.—This is quite a common disease, particularly among game fowls.

Treatment:—A wash of chlorate of potash dissolved in common rum, whiskey or cider vinegar is an excellent application for canker or ulcerated sores. Use Labarraque's solution of chlorinated soda mixed with about half water, for swabing the mouth or face, and apply nitrate of silver or powdered burnt alum or borax to the bare spots, or paint twice daily with perchoride of iron the inside of the mouth, and touch the sores outside with lunar caustic.

SCALEY LEGS.—This disease is caused by microscopic parasites which gather in the crevices between the leg scales.

Treatment:—A mixture of lard and sulphur applied daily after washing. Kerosene rubbed into the crevices with a tooth brush, or kerosene and lard rubbed between the scales is a cure.

INDIGESTION.—This disease is seldom noticed until the fowl suffers from sour crop or shows want of appetite, scant and unhealthy droppings.

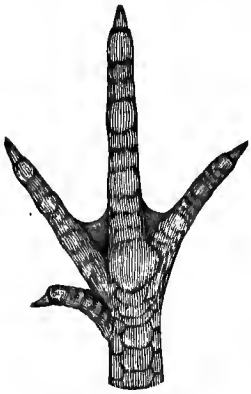
Treatment:—Feed sparingly on cooked food, with little or no water to drink but what is acidulated with nitric acid, say ten drops of acid to a half pint of water. Also mix a half teaspoonful of sal volatile in the bird's mess every morning. A little rhubarb every few days and cut onions will do much good.

GAPES.—This is a very troublesome disease and is caused by the presence of small thread-like worms in the windpipe.

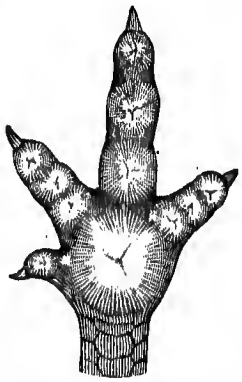
Treatment:—The passage of a feather stripped of its down to within a short distance of the end, into the windpipe and withdrawn after two or three turns. It is better to dip the feather into turpentine or kerosene before using it. Twisted horse hair made into a loop, and applied like the feather. A gargle composed of water ten parts, carbolic acid one part, and salicylic acid one part. Press the gullet of the fowl with thumb and finger so that it cannot breathe, fill the throat and mouth with the gargle; letting it remain in the mouth, then pour out, sprinkling or blowing sulphur down the throat and windpipe. Rue, garlic and camphor. Inhalation of lime dust, sulphur and carbolic acid fumes or chlorine gas is good.

BUMBLE FOOT.—This is quite a common ailment among the heavy breeds. It is somewhat akin to "stone bruise." An ailment

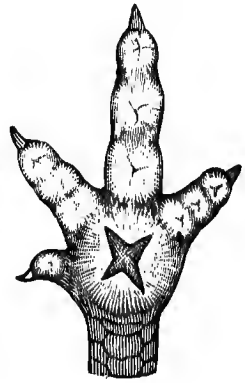
well known to barefooted boys. It is a hard swelling and usually comes on the ball of the foot; if neglected it forms into an abscess, and afterwards hardens down to a corn. It sometimes begins like a wart or black spot, the swelling spreading around it, and sometimes there is an enlargement of the toes, or between the toes, to the size of an acorn, the under surface showing a yellow, cheesy matter when opened. Bumble foot is usually caused by the fowl jumping from a high perch upon a stone, cinder or hard lump; continually walking on hard and uneven clayey soil, perching on knotty or sharp pointed poles, slivers, or severe contusions against some hard substance.



Disease just beginning to show.



Disease far advanced.



Showing cut made with knife.

Treatment.—When first noticed, examine it carefully, and see in what stage it has developed. If not too far ahead, paint it freely with tincture of iron and arnica. This treatment will take the soreness out, and either dispel the fluids of suppuration, or hasten its ripeness. After suppuration takes place, make a cruciform cut thus (X), with a lance or sharp knife into the core, and press out all the pus and core; then syringe it well with one part carbolic acid, to ten of water, for several days. If the core does not yield to this treatment, apply lunar caustic or blue stone to it. Poultices of linseed meal will hasten the healing and draw out the purulent matter. When the edges of the cut begin to heal, apply a little vaseline daily. In neglected cases, the swelling hardens down to a corn, when little can be done for it, without injuring the sole of the foot. When the swelling is between the toes, or on the shank, open at the

bottom and the top, and use the syringe with the acid solution. The bird should be kept on a soft bed of straw or fine loam, for some time, and not allowed to perch until well.

CONCLUDING REMARKS.

"An ounce of prevention is worth a pound of cure." This is a trite adage, and is as true and apropos in regard to the diseases of fowls, as when applied to the diseases of mankind. Many of the diseases and ailments of fowls might be checked or quite prevented without dosing them with medicine, if sanitary laws were observed in the hennery. Cleanliness, pure air, plenty of exercise, ample space, plain and varied food, pure water to drink, and avoiding overcrowding and variations of temperature; these are the conditions of sanitary laws, and if strictly observed in the care of fowls, the breeder can throw his "physic to the dogs," but if there is a hereditary taint in the blood, or a constitutional weakness in the stock from incestuous breeding, then disease will be a frequent visitor, do as you will, because it is an organic affection, and firmly seated.

We recommend the frequent use of the Douglas Mixture, and tincture of iron in the drinking water; a little sulphur and charcoal occasionally in the food, and some simple condiment when necessary, for seasoning, will be much relished by the fowls, and will vastly improve their health and looks.

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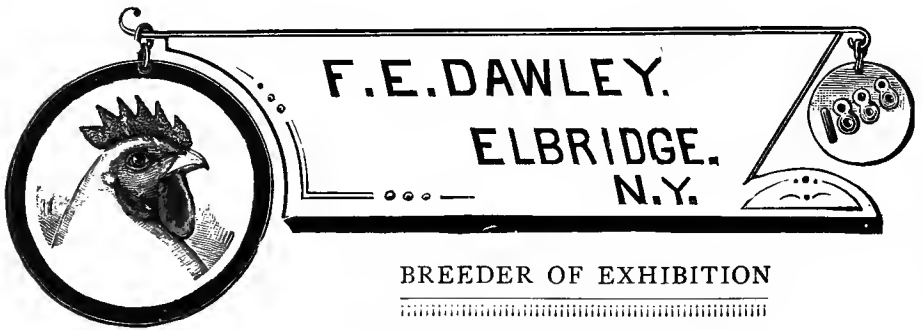

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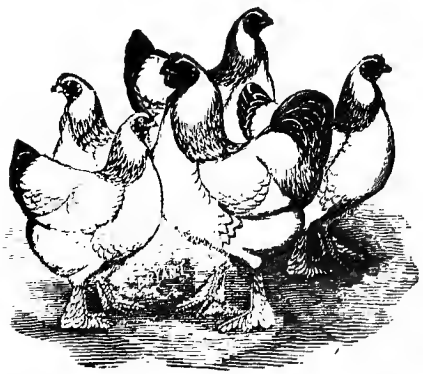

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